

Moving Beyond Spreads – Spread² and Others

Alright let's go beyond just spreads and look at how to put together more than 2 assets.

Definitions

1 Asset = 1*Financial Product

1 Spread = 1*Asset A – 1*Asset B (aka Long one and short one)

Asterisks represent multiplication

Now it gets interesting. We can put together multiple spreads to create more complicated structures.

Case 1: Spread of a spread

Spread of a spread = 1*Spread – 1*Spread = (1*Asset A – 1*Asset B) – (1*Asset C – 1*Asset D)

Here, we are longing one spread and shorting another.

If we long the trade above, we are betting that Asset A will outperform Asset B faster than Asset C will outperform Asset D.

In other words, we bet that Asset A is way stronger than Asset B, as compared to Asset C vs Asset D.

When to use this

We run this trade when we aren't sure that Asset A will beat Asset B.

But if it does, it will beat Asset B more than Asset C will beat Asset D.

But if it does not, it will get beaten by Asset B less than how much Asset C will get beaten by Asset D.

I know that sounds confusing, so let's run some numbers.

In the following scenarios, we use dollar-hedging.

Scenario 1:

- Asset A moves +10%
- Asset B moves -5%
- Asset C moves +18%
- Asset D moves +16%

$(A - B) = 15\%$

$(C - D) = 2\%$

Our spread of a spread = $(A - B) - (C - D) = 15 - 2 = 13\%$

We made 13%

Scenario 2:

- Asset A moves -8%
- Asset B moves -6%

- Asset C moves -15%
- Asset D moves -10%

$$(A - B) = -2\%$$

$$(C - D) = -5\%$$

$$\text{Our spread of a spread} = (A - B) - (C - D) = -2 - (-5) = 3\%$$

We made 3%

Here, $(A - B)$ was not profitable but we still made 3%.

You might wonder, if we trade $(A - B) - (C - D)$, can we just trade $(A - D)$?

It might seem like if $(A - B) > (C - D)$, A should be greater than D.

However, that's not true. Using the above 2 scenarios, we can see that $(A - D) = 2\%$ for scenario 2 but it is -6% for scenario 1.

Case 2: Spreading 2 groups

Spreading 2 group of assets = $(1 \times \text{Asset A} + 1 \times \text{Asset B} + 1 \times \text{Asset C}) - (1 \times \text{Asset D} + 1 \times \text{Asset E} + 1 \times \text{Asset F} + 1 \times \text{Asset G})$

Here, we are longing one group of stocks and shorting another. Note that we don't need each group to have the same number of stocks.

This method is more straight-forward than the spread of a spread. We usually group stocks that are similar.

Thus, we are saying one group is more likely to outperform the other.

An example will be to spread a group of ecommerce stocks vs a group of traditional retail stocks.

In this bet, we are betting the ecommerce will overwhelm traditional retail.

However, we aren't sure which ecommerce stock will win or which traditional retail stock will lose. Thus, we spread groups of stocks as opposed to spread individual stocks.

Case 3: Overlapping spreads

This refers mainly to futures. To explain this, I need go through quite a bit of basics.

Hence for now, I'm just going to give you a sneak peek.

$$\text{Spread A} = 1 \times \text{Bond Futures A} - 1 \times \text{Bond Futures B} = 1 \times \text{BF A} - 1 \times \text{BF B}$$

Let Bond Futures A = BF A for simpler expression

$$\text{Spread B} = 1 \times \text{BF B} - 1 \times \text{BF C}$$

$$\text{Structure AB} = \text{Spread A} - \text{Spread B} = 1 \times \text{BF A} - 2 \times \text{BF B} + 1 \times \text{BF C}$$

$$\begin{aligned}\text{Structure AB} - \text{Structure BC} &= (\text{Spread A} - \text{Spread B}) - (\text{Spread B} - \text{Spread C}) \\ &= 1*BF A - 3*BF B + 3*BF C - 1*BF D\end{aligned}$$

I can go on and keep doubling/overlapping the structure

There are traders who trade massive structures such as:

$$1*BF A - 5*BF B + 10*BF C - 10*BF D + 5*BF E - 1*BF F$$

These types of structures are a type of futures calendar spreads. They are very stable and mean reverting.

Don't worry if you are completely lost. We will talk about this again in the later chapters, starting with what is a future.

Rearranging Case 1 to Case 2:

Some of you might have realised, we can rearrange $(A - B) - (C - D)$ to $(A + D) - (B + C)$, which is a form of case 2.

You can do that, but I don't recommend it. It might make things difficult when you are doing your hedging.

For instance, if you are market-hedging in case 1, you will market hedge $(A - B)$ and $(C - D)$ separately. Since $(A - B)$ and $(C - D)$ are both market-hedged, $(A - B) - (C - D)$ should be market-hedged too.

If you are market-hedging in case 2, you will market hedge $(A + B)$ against $(C + D)$. The final sizing ratios you get might be different than those in case 1.

This might conflict with the original reason for doing the spread of a spread trade.